

**Remarks**

This Application has been carefully reviewed in light of the Office Action mailed April 11, 2002. Applicants appreciate the Examiner's consideration of the Application. To further clarify, more particularly point out, and more distinctly claim various inventive concepts already present in Applicants' claims, Claims 1, 8, 14, and 22 have been amended, Claim 15 has been cancelled without prejudice or disclaimer, and new Claims 25-47 have been added. Certain of these changes do not narrow the claims and were not made in relation to patentability. None of these changes are considered necessary for patentability. Applicants respectfully request reconsideration and full allowance of all pending claims.

**Drawings**

Applicants have amended FIGURES 1 and 8, as indicated in red ink on the drawings attached in Appendix C, to provide additional clarity. Acceptance of the amended drawings is respectfully requested.

**Objections to the Specification**

Applicants have amended FIGURES 1 and 8 and Page 11 of the Application to correct the informalities requested by the Examiner.

**Applicants' Claims are Allowable Over *Huang***

The Examiner rejects Claims 1, 2, 4, 6-10, 12-18, and 20-24 under 35 U.S.C. § 102(e) as being as being anticipated by U.S. Patent 5,953,707 to Huang, et al. ("*Huang*").

*Huang* discloses a Decision Support System (DSS) that relies on quantitative models and data analysis routines to provide decision support. (Column 4, Lines 47-49). In *Huang*, a frame-specific, customizable Graphical User Interface (GUI) is provided to support the interaction between users and the DSS in a decision process. (Column 98, Lines 19-23). *Huang* also discloses computing and displaying sales history on a per product/product group or customer/customer group basis or on different levels of aggregation (i.e., this year vs. last year, actual sales v. budget, and year-to-date vs. balance of year). (Column 20, Lines 15-17 and 21-24). A Demand Management Frame (DMF) supporting a demand management decision process is further disclosed in *Huang*. (Column 18, Lines 7-8). According to *Huang*,

demand management is the process in which the user determines future requirements based on past requirement history and general information related to the supply chain, the DMF supporting the analysis of past demand, market trends, and development of future forecasts. (Column 19, Lines 20-25). Statistical forecasts may be generated and displayed (tables and graphs) at different levels of aggregation, such as customer group, individual customers for all products, and individual products for each product. (Column 21, Lines 2-5). *Huang* further discloses a Finished Goods Network Design (FGDND) Module that works with a Market Data Analysis (MDA) Module and a Sales Forecasting & Planning (SPF) Module to develop a forecast of aggregate long-term demand which is then used to evaluate potential Distribution Center (DC) locations. (Column 38, Lines 5-9). In *Huang*, an optimization of overall network configuration is then produced, which assigns demand nodes and production nodes to DCs. (Column 38, Lines 13-16).

#### **Independent Claim 1 is Allowable**

In contrast to the system disclosed in *Huang*, independent Claim 1 of the present application, as amended, recites:

A system operable on at least one computer for displaying planning information associated with a supply chain, comprising:  
a planning engine operable to access an enterprise model representing a supply chain that involves a plurality of products and resources and to use the enterprise model to generate planning information for the supply chain according to one or more specified constraints and one or more optimization criteria; and  
a presentation interface operable to generate a first visual display for selected planning information, the first visual display comprising a cashflow report providing a net present value for one or more products in the supply chain, each net present value reflecting revenues and expenses associated with a corresponding product according to time periods in which the revenues and expenses occur.

*Huang* does not disclose, teach, or suggest the combination of limitations specifically recited in Applicants' Claim 1, whether *Huang* is considered alone or in combination with any other reference of record or with knowledge of one skilled in the art at the time of invention.

For example, *Huang* does not disclose, teach, or suggest a "*first visual display comprising a cashflow report providing a net present value for one or more products in the supply chain, each net present value reflecting revenues and expenses associated with a corresponding product according to time periods in which the revenues occur*" as recited in Claim 1. *Huang* merely discloses a Decision Support System (DSS) that relies on quantitative models and data analysis routines to provide decision support. (Column 4, Lines 47-49). In *Huang*, a frame specific, customizable Graphical User Interface (GUI) is provided to support the interaction between users and the DSS in a decision process. (Column 98, Lines 19-23). *Huang* also discloses computing and displaying sales history on a per product/product group or customer/customer group basis, or on different levels of aggregation (i.e., this year vs. last year, actual sales v. budget, and year-to-date vs. balance of year). (Column 20, Lines 15-17 and 21-24). Nowhere does *Huang* even so much as allude to "*net present value*," much less "*a cash flow report*" providing net present value information as recited in Claim 1. *Huang* certainly does not disclose, teach, or suggest a "*first visual display comprising a cashflow report providing a net present value for one or more products in the supply chain, each net present value reflecting revenues and expenses associated with a corresponding product according to time periods in which the revenues occur*" as recited in Claim 1.

Furthermore, the Examiner states:

Because the supply planning system of *Huang* provides a customizable GUI to create reports and displays in table and graphic forms (col. 98 lines 19-30), the examiner considers *the bulk of the invention claimed by the applicant as anticipated.*<sup>1</sup> Also, popular spreadsheet systems such as Microsoft Excel for many years have had the capability to display the reports claimed in the current invention.

(Office Action, Page 7) (emphasis added). For anticipation under 35 U.S.C. § 102, the reference must teach every aspect of the claimed invention either explicitly or inherently.<sup>1</sup> Any feature not explicitly taught must be inherently present. M.P.E.P. § 706.02. Thus, even

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<sup>1</sup> M.P.E.P. § 706.02. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987); M.P.E.P. § 2131.

if *Huang* teaches "the bulk of the invention" (with which Applicants in no way agree), *Huang* still does not anticipate Applicants' claimed invention.

For at least these reasons, *Huang* fails to disclose, teach, or suggest the limitations recited in Claim 1, as amended, whether *Huang* is considered alone or in combination with any other reference of record or with knowledge of one skilled in the art at the time of the invention. Accordingly, Applicants respectfully request reconsideration and allowance of Claim 1.

### **Independent Claim 8 is Allowable**

In addition to reciting certain limitations similar to those present in Claim 1, independent Claim 8 of the present application, as amended, recites "*a presentation interface operable to generate a first visual display for selected planning information, the first visual display comprising a profit margin report that indicates, for one or more products associated with a specified resource, a profit margin for each time interval the resource is in use.*" *Huang* does not disclose, teach, or suggest this combination of limitations, as specifically recited in Applicants' Claim 8, whether *Huang* is considered alone or in combination with any other reference of record or with knowledge of one skilled in the art at the time of invention.

For example, *Huang* does not disclose, teach, or suggest a "*first visual display comprising a profit margin report that indicates, for one or more products associated with a specified resource, a profit margin for each time interval the resource is in use.*" As discussed above, *Huang* merely discloses computing and displaying sales history on a per product/product group or customer/customer group basis or on different levels of aggregation (i.e., this year vs. last year, actual sales v. budget, and year-to-date vs. balance of year). (Column 20, Lines 15-17 and 21-24). Nowhere does *Huang* even so much as allude to "*profit margin,*" much less "*a profit margin report*" as recited in Claim 8. *Huang* certainly does not disclose, teach, or suggest "*a presentation interface operable to generate a first visual display for selected planning information, the first visual display comprising a profit margin report that indicates, for one or more products associated with a specified resource, a profit margin for each time interval the resource is in use*" as recited in Claim 8.

For at least these reasons, and others recited above with reference to Claim 1, *Huang* fails to disclose, teach, or suggest the limitations recited in Claim 8, as amended, whether *Huang* is considered alone or in combination with any other reference of record or with knowledge of one skilled in the art at the time of the invention. Accordingly, Applicants respectfully request reconsideration and allowance of Claim 8.

**Independent Claim 14 is Allowable**

In addition to reciting certain limitations similar to those present in Claim 1, independent Claim 14 of the present application, as amended, recites:

[A] presentation interface operable to generate a first visual display for selected planning information, the first visual display comprising a report that indicates, for one or more products in the supply chain, a forecasted demand and a number of units allocated for production;

the report including a bar graph comprising:

a first axis scaled in terms of numbers of units;

a bar, associated with a product in the supply chain, extending from a second axis to a height corresponding to a first position on the first axis, the first position indicating a number of units of the product that could be sold according to customer demand; and

a marker on the bar corresponding to a second position on the first axis, the second position indicating a number of units of the product allocated for production.

*Huang* does not disclose, teach, or suggest the combination of limitations specifically recited in Applicants' Claim 14, whether *Huang* is considered alone or in combination with any other reference of record or with knowledge of one skilled in the art at the time of invention.

For example, *Huang* does not disclose, teach, or suggest "*the first visual display comprising a report that indicates, for one or more products in the supply chain, a forecasted demand and a number of units allocated for production, the report including a bar graph comprising a first axis scaled in terms of numbers of units; a bar, associated with a product in the supply chain, extending from a second axis to a height corresponding to a first position on the first axis, the first position indicating a number of units of the product that could be sold according to customer demand; and a marker on the bar corresponding to a second*

*position on the first axis, the second position indicating a number of units of the product allocated for production."* Huang merely discloses a Decision Support System (DSS) that relies on quantitative models and data analysis routines to provide decision support. (Column 4, Lines 47-49). Huang further discloses a Demand Management Frame (DMF) supporting a demand management decision process. (Column 18, Lines 7-8). According to Huang, demand management is the process in which the user determines future requirements based on past requirement history and general information related to the supply chain, the DMF supporting the analysis of past demand and of market trends as well as the development of future forecasts. (Column 19, Lines 20-25). Huang further discloses generating and displaying (tables and graphs) statistical forecasts at different levels of aggregation, such as customer group, individual customers for all products, and individual products for each product. (Column 21, Lines 2-5). Nowhere, however, does Huang disclose teach or suggest a report including a bar graph comprising "*a first axis scaled in terms of numbers of units;*" a bar, associated with a product in the supply chain, "*extending from a second axis to a height corresponding to a first position on the first axis, the first position indicating a number of units of the product that could be sold according to customer demand;*" and "*a marker on the bar corresponding to a second position on the first axis, the second position indicating a number of units of the product allocated for production*" as recited in Claim 14.

For at least these reasons, and others stated above with reference to Claim 1, Huang fails to disclose, teach, or suggest the limitations recited in Claim 14, as amended, whether Huang is considered alone or in combination with any other reference of record or with knowledge of one skilled in the art at the time of the invention. Accordingly, Applicants respectfully request reconsideration and allowance of Claim 14.

### **Independent Claim 22 is Allowable**

In addition to reciting certain limitations similar to those present in Claim 1, independent Claim 22 of the present application, as amended, recites:

[A] presentation interface operable to generate a first visual display for selected planning information, the first visual display comprising a plant distribution report that includes a bottom panel comprising:  
a first axis specifying a plurality of locations;

a second axis specifying profit margins per hour;  
and

a plurality of icons representing resources in the supply chain, each icon positioned relative to the first axis to indicate a location associated with a corresponding resource and relative to the second axis to indicate a profit margin per hour associated with the corresponding resource.

*Huang* does not disclose, teach, or suggest the combination of limitations specifically recited in Applicants' Claim 22, whether *Huang* is considered alone or in combination with any other reference of record or with knowledge of one skilled in the art at the time of invention.

For example, *Huang* does not disclose, teach, or suggest a "first visual display comprising a plant distribution report that includes a bottom panel comprising: a first axis specifying a plurality of locations; a second axis specifying profit margins per hour; and a plurality of icons representing resources in the supply chain, each icon positioned relative to the first axis to indicate a location associated with a corresponding resource and relative to the second axis to indicate a profit margin per hour associated with the corresponding resource." *Huang* merely discloses a Finished Goods Network Design (FGDND) Module that works with a Market Data Analysis (MDA) Module and a Sales Forecasting & Planning (SPF) Module to develop a forecast of aggregate long-term demand which is then used to evaluate potential Distribution Center (DC) locations. (Column 38, Lines 5-9). In *Huang*, an optimization of overall network configuration is then produced, which assigns demand nodes and production nodes to DCs. (Column 38, Lines 13-16). Nowhere does *Huang* disclose, teach, or suggest a "first visual display comprising a plant distribution report," much less one that includes a bottom panel comprising "a first axis specifying a plurality of locations;" "a second axis specifying profit margins per hour;" and "a plurality of icons representing resources in the supply chain, each icon positioned relative to the first axis to indicate a location associated with a corresponding resource and relative to the second axis to indicate a profit margin per hour associated with the corresponding resource" as recited in Claim 22.

For at least these reasons, and others stated above with reference to Claim 1, *Huang* fails to disclose, teach, or suggest the limitations recited in Claim 22, as amended, whether *Huang* is considered alone or in combination with any other reference of record or with

knowledge of one skilled in the art at the time of the invention. Accordingly, Applicants respectfully request reconsideration and allowance of Claim 22.

**Dependent Claims 2, 4, 6-7, 9-10, 12-13, 15-18, 20-21, and 23-24 are Allowable**

In addition to being dependent on Claims 1, 8, 14, and 22, which Applicants have shown to be allowable, Claims 2, 4, and 6-7 (which depend from Claim 1), Claims 9-10 and 12-13 (which depend from Claim 8), Claims 15-18 and 20-21 (which depend from Claim 14), and Claims 23-24 (which depend from Claim 22) recite further patentable distinctions over the prior art of record.

For example, Claim 2 recites that the cashflow report of Claim 1 includes a two-dimensional display comprising *"a first panel presenting a list of the products," "a second panel presenting the net present value for each listed product," and "a third panel presenting a plurality of columns, each column corresponding to a specified time period and providing a net cashflow associated with each listed product during that time period."* Huang merely discloses a table containing rows of products or product groups and columns containing the sales data for those products or product groups aggregated at the appropriate levels. (Figure 56; Column 106, Lines 36-40). At a minimum, Huang fails to disclose, teach, or suggest *"a second panel presenting the net present value for each listed product" or "a third panel presenting a plurality of columns, each column corresponding to a specified time period and providing a net cashflow associated with each listed product during that time period"* as recited in Claim 2.

As another example, Claim 4 recites that the presentation interface of Claim 1 is further operable to generate a second visual display comprising a product report, the product report comprising *"a first bar graph indicating, for one or more products in the supply chain, a percentage of forecasted demand satisfied by allocated production;" "a second bar graph indicating a profit margin per unit for each of the products;" and "a third bar graph indicating, for each of the products, a number of units produced for each time interval a specified resource is in use."* Huang merely discloses graphically representing production, sales, and inventory information according to selected time periods. (Figure 43). Huang further discloses a production plan displaying the results of capacity checking for production resources. (Column 108, Lines 60-63). At a minimum, Huang fails to disclose, teach, or



suggest "*a profit margin per unit*," much less a product report comprising "*a second bar graph indicating a profit margin per unit for each of the products*" as recited in Claim 4.

As yet another example, Claim 9 recites that the profit margin report of Claim 8 includes a graph comprising "*a first axis scaled in terms of profit margins per unit*," "*a second axis scaled in terms of numbers of units produced for each time interval the specified resource is in use*;" and "*a plurality of nodes representing the products associated with the specified resource, each node located at a position in the graph corresponding to the values for the product on the first and second axes*." As discussed above, *Huang* merely discloses computing and displaying sales history on a per product/product group or customer/customer group basis or on different levels of aggregation (i.e., this year vs. last year, actual sales v. budget, and year-to-date vs. balance of year). (Column 20, Lines 15-17 and 21-24). Nowhere does *Huang* even so much as allude to "*profit margins per unit*," much less a graph comprising in part "*a first axis scaled in terms of profit margins per unit*" as recited in Claim 9. Furthermore, nowhere does *Huang* disclose, teach, or suggest a graph comprising in part "*a plurality of nodes representing the products associated with the specified resource, each node located at a position in the graph corresponding to the values for the product on the first and second axes*" as recited in Claim 9.

For at least these reasons, Applicants respectfully request reconsideration and allowance of dependent Claims 2, 4, 6-10, 12-13, 16-18, 20-21, and 23-24.

#### **Applicants' Claims are Allowable Over the Proposed *Huang-Koski* Combination**

The Examiner rejects Claim 3 as being unpatentable over *Huang* as applied to Claim 1 and further in view of U.S. Patent 5,596,502 to Koski, et al. ("*Koski*").

Claim 3 is allowable, at a minimum, because it depends on Claim 1, which Applicants have shown above to be allowable. In addition, Applicants respectfully submit that the Examiner's proposed combination of *Huang* with *Koski* is improper for at least two reasons. First, the required suggestion or motivation to combine *Huang* with *Koski* is lacking. Second, even if *Koski* could properly be combined with *Huang*, the proposed combination would still fail to disclose, teach, or suggest the limitations recited in the rejected claim.

First, the rejection of Claim 3 is improper because the Examiner has not shown the required suggestion or motivation in *Huang*, *Koski*, or in the knowledge generally available to one of ordinary skill in the art at the time of the invention to combine these references. "The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." M.P.E.P. § 2143.01 (emphasis in original). Thus, the mere fact that the teachings of one reference would improve the teachings of another reference, as the Examiner asserts, does not provide the required suggestion or motivation to combine. Nothing in *Huang*, *Koski*, or any other cited reference suggests or motivates the proposed combination, nor has the Examiner provided evidence that suggests or motivates the proposed combination.<sup>2</sup> Speculation in hindsight that "it would have been obvious" to make the proposed combination because the proposed combination would be helpful is insufficient under the M.P.E.P.<sup>3</sup> and governing Federal Circuit case law.<sup>4</sup>

Second, even if *Koski* could properly be combined with *Huang*, the proposed combination would still fail to disclose, teach, or suggest the limitations specifically recited in Claim 3. As just one example, Claim 3 recites that the cashflow report recited in Claim 1 includes a three-dimensional display comprising "*a bottom panel including a first axis specifying a plurality of products, a second axis specifying a plurality of time periods, and a*

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<sup>2</sup> If "common knowledge" or "well known" art is being relied on to combine the references, Applicants respectfully request that a reference be provided in support of this position pursuant to M.P.E.P. § 2144.03. If personal knowledge is being relied on to supply the required motivation or suggestion to combine, Applicants respectfully request that an affidavit supporting such facts be provided pursuant to M.P.E.P. § 2144.03.

<sup>3</sup> See M.P.E.P. § 2145 X.C. ("The Federal Circuit has produced a number of decisions overturning obviousness rejections due to a lack of suggestion in the prior art of the desirability of combining references.").

<sup>4</sup> For example, in *In re Dembiczak*, 175 F.3d 994 (Fed. Cir. 1999), the Federal Circuit reversed a finding of obviousness by the Board of Patent Appeals and Interferences, explaining that evidence of a suggestion, teaching, or motivation to combine is essential to avoid impermissible hindsight reconstruction of an applicant's invention:

Our case law makes clear that the best defense against the subtle but powerful attraction of hind-sight obviousness analysis is *rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references*. Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight.

175 F.3d at 999 (quoting *W.L. Gore & Assoc., Inv. v. Garlock, Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1983)) (emphasis added) (citations omitted). See also *In Re Jones*, 958 F.2d 347 ("Conspicuously missing from this record is any evidence, other than the PTO's speculation (if that can be called evidence) that one of ordinary

*plurality of bars each associated with a particular time period and a particular product, each bar having a height relating to a number of units of the associated product produced during the associated time period;" "a left panel including a bar graph indicating a net cash flow of the products specified by the first axis in the bottom panel;" and "a right panel including a bar graph indicating a net cash flow for each of the time periods specified by the second axis in the bottom panel."* Koski merely discloses a display program (the CUBEVIEW program), which provides a series of three dimensional representations to a computer monitor of Demand and Supply of Resources (displayed on the z axis) at Workspaces (displayed on the y axis) in Time (displayed on the x axis) and includes a display of Resource contentions. (Column 6, Lines 9-15). As noted above, *Huang* merely discloses computing and displaying sales history on a per product/product group or customer/customer group basis or on different levels of aggregation (i.e., this year vs. last year, actual sales v. budget, and year-to-date vs. balance of year). (Column 20, Lines 15-17 and 21-24). Neither *Huang* nor *Koski* even so much as alludes to "net cash flow." At a minimum, nothing in the proposed *Huang-Koski* combination discloses, teaches, or suggests *"a left panel including a bar graph indicating a net cash flow for each of the products specified by the first axis in the bottom panel"* or *"right panel including a bar graph indicating a net cash flow for each of the time periods specified by the second axis in the bottom panel"* as recited in Claim 3. Thus, the proposed *Huang-Koski* combination fails to disclose, teach, or suggest the limitations of Claim 3.

For at least these reasons, Applicants respectfully request reconsideration and allowance of Claim 3.

#### **Applicants' Claims are Allowable Over the Proposed *Huang-Kennedy* Combination**

The Examiner rejects Claims 5, 11, and 19 as being unpatentable over *Huang* as applied to Claims 1, 8, and 14 above and further in view of U.S. Patent 5,832,532 to Kennedy, et al. ("*Kennedy*").

Claims 5, 11, and 19 are allowable, at a minimum, because they depend on Claims 1, 8, and 14, respectively, which Applicants have shown above to be allowable. In addition, Applicants respectfully submit that the rejection of Claims 5, 11, and 19 is improper because the Examiner has not shown the required suggestion or motivation in *Huang*, *Kennedy*, or in

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skill in the herbicidal art would have been motivated to make the modification of the prior art salts necessary to

the knowledge generally available to one of ordinary skill in the art at the time of the invention to combine these references. Applicants reiterate the standard, discussed above, for demonstrating the required suggestion or motivation to combine references. For example, Applicants respectfully note that *Huang* contains no mention whatsoever of a "*visual display comprising a product mix report that includes a pie chart*" as recited in Claims 5, 11, and 19.

For at least these reasons, Applicants respectfully requests reconsideration and allowance of dependent Claim 5. Claims 11 and 19 recite substantially similar limitations to those recited in Claim 5. Accordingly, for at least the same reasons, Applicants respectfully request reconsideration and allowance of Claims 11 and 19.

#### **New Claims 25-47 are Allowable**

New Claims 25-47 are directed to methods, recite substantially similar limitations to those recited in Claims 1-14 and 16-24, and are allowable for at least the same reasons. Applicants respectfully request consideration and allowance of Claims 25-47.

#### **Information Disclosure Statement**

Applicants mailed an Information Disclosure Statement (IDS) on August 24, 2000. The PTO received the IDS on August 29, 2001. Applicants note that the Examiner has not indicated consideration of the references listed on the IDS. Copies of the IDS, references, and postcard are attached for the Examiner's convenience. Applicants respectfully request the Examiner to indicate consideration of the references listed on the IDS.

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arrive at [the claimed invention].").

**Conclusion**

Applicants have made an earnest attempt to place this case in condition for allowance. For the foregoing reasons, and for other reasons clearly apparent, Applicants respectfully request full allowance of all pending claims.

If the Examiner feels that a telephone conference would advance prosecution of this Application in any manner, the Examiner is invited to contact Christopher W. Kennerly, Attorney for Applicants, at the Examiner's convenience at (214) 953-6812.

A check for \$750.00 is included to cover the cost of 23 new Claims total, four of which are independent. Although no other fees are believed due, the Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,  
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Date: July 11, 2002

Enclosures: Copy of Information Disclosure Statement  
References  
Postcard

**Appendix A****Mark-Ups Reflecting Changes to Specification**

For the convenience of the Examiner, the following mark-ups reflect the changes to the specification.

Please replace the paragraphs on Page 1 under the "Cross Reference to Related Applications" heading with the following paragraphs:

This application claims the benefit of serial number 60/100,975, entitled "Supply Chain Management Tool With Profit Optimization," filed **[provisionally on]** September 18, 1998.

This application is related to U.S. Application No. 09/374,461 entitled "System and Method for Visually Representing a Supply Chain," **[which was]** filed August 13, 1999, and U.S. Application No. **[09/\_\_\_\_\_ (Attorney's Docket No. 020431.0452)] 09/397,473** entitled "System and Method for Displaying Logistics Information Associated with a Supply Chain," **[which was]** filed September **[\_\_]** 17, 1999.

On Page 2, please replace the paragraph beginning on Line 2 with:

Business enterprises use computer-implemented management systems to model supply chains and to provide plans for producing and delivering products and services to customers. Typically, management systems address planning decisions as constrained optimization problems. For example, in a manufacturing environment, a management system may schedule a sequence of tasks for a piece of manufacturing equipment. The management system might specify start times for each task according to one or more optimization criteria, such as minimizing inventory, maximizing profit, or maximizing resource utilization. The management system might also **[considers] consider** various constraints, such as the capabilities of the equipment or deadlines by which products must be delivered to customers. Previous systems are inadequate for many needs, particularly with respect to the manner in which planning information associated with supply chains is provided to users of these systems.

On Page 5, please replace the paragraph beginning on Line 21 with:

Enterprise model 24 represents a supply chain in terms of its products and their component parts. To produce and deliver products to customers, an enterprise must use resources to perform various activities. These resources may include raw materials, component parts, labor, manufacturing facilities and equipment, distribution channels, transportation resources, warehouses, sales support, or any other resources that may affect the enterprise's ability to produce and deliver products to customers. For profit optimization planning, enterprise model 24 generates, for each product in a supply chain, cash inflows and cash outflows that represent revenues and expenses associated with the products. In a particular embodiment, model 24 calculates expenses by representing costs according to the times at which the costs occur. This method of calculating expenses more accurately reflects the time value of money than an accrual method that does not recognize costs until a sale occurs. Model 24 includes raw material costs, operation costs, inventory carrying costs, handling costs, or any other suitable costs that accompany supply chain activities in any suitable combination. In a particular embodiment, model 24 stores raw material costs in terms of dollars/unit, operation costs in terms of dollars/unit or dollars/hour, inventory carrying costs in terms of dollars/unit/time, and handling costs in terms of dollars/unit.

On Page 7, please replace the paragraph beginning on Line 9 with:

Presentation [**layer**] interface 28 provides a user interface for inputting data affecting model 24, for scenario analysis of model 24, and for viewing planning information generated by engine 26. Based on the planning information generated by engine 26, presentation interface 28 generates several supply chain reports, singly or in any suitable combination, which are described in further detail below with reference to FIGURES 2-9.

On Page 7, please replace the paragraph beginning on Line 14 with:

Enterprise model 24, planning engine 26, and presentation interface 28 operate on one or more computers 14 that include at least one processor 30. Computer 14 receives information from a user using an input device 18, which may include a keyboard, mouse, touch-screen, microphone, or any other [**advice**] device that accepts information. Computer 14 presents visual display 32 to the user using output device 20, which may include a computer monitor, a projector, a printer, or any other suitable device with a display screen or

other visual output capability. In a particular embodiment, computer 14 is a network server, and users interact with computer 14 using one or more client computers 22. In such an embodiment, client computers 22 may provide planning information to various personnel at geographically distributed locations.

On Page 7, please replace the paragraph beginning on Line 24 with:

FIGURES 2-9 illustrate exemplary visual displays 32 generated by presentation interface 28 and displayed using output device 20. Although the supply chain reports in FIGURES 2-9 relate to the steel industry, presentation interface 28 may generate and output device 20 may display similar supply chain reports relating to any suitable single-enterprise or multi-enterprise industry or supply chain environment. In a particular embodiment, visual display 32 **[present] presents** the reports in one or more application windows that include pull-down menus, tool bars, or other suitable graphical user interfaces to receive commands, instructions, options, or other input from a user. Using any of the supply chain reports described with reference to FIGURES 2-9, a user can simulate and evaluate proposed supply chain plans developed by planning engine 26.

On Page 11, please replace the paragraph beginning on Line 8 with:

Run rate bar graph 106 associates each product identifier 110 with a bar 128 indicating a rate at which units are processed by a selected resource. Using pull-down selector **[116] 126**, a user selects a resource in the supply chain. In the illustrated embodiment, a user again has selected the hot roll mill with an 88 percent utilization rate. In response to the user selection, run rate bar graph 106 associates each product identifier 110 with a bar 128 indicating a rate at which the selected resource, in this case the hot roll mill, processes units of each identified product. In the illustrated embodiment, run rate bar graph 106 also includes numerical values 130 indicating the rates of processing and ranks 132 indicating relative relationships among the processing rates. Although the processing rates are specified in terms of units produced per hour, processing rates may be determined over days, weeks, months, quarters, years, or any other suitable time periods.



**Appendix B****Mark-Ups Reflecting Changes to Claims**

For the convenience of the Examiner, the following mark-ups reflect the changes to the claims.

1. (Amended) A system [operating] operable on at least one computer for displaying planning information associated with a supply chain, comprising:

**[an enterprise model representing a supply chain that involves a plurality of products and resources;]**

a planning engine operable to access an enterprise model representing a supply chain that involves a plurality of products and resources and to use the enterprise model to generate planning information for the supply chain according to one or more specified constraints and one or more optimization criteria; and

a presentation interface operable to generate a first visual display for selected planning information, the first visual display comprising a cashflow report providing a net present value for one or more products in the supply chain, each net present value reflecting revenues and expenses associated with a corresponding product according to time periods in which the revenues and expenses occur.

8. (Amended) A system [operating] operable on at least one computer for displaying planning information associated with a supply chain, comprising:

**[an enterprise model representing a supply chain that involves a plurality of products and resources;]**

a planning engine operable to access an enterprise model representing a supply chain that involves a plurality of products and resources and to use the enterprise model to generate planning information for the supply chain according to one or more specified constraints and one or more optimization criteria; and

a presentation interface operable to generate a first visual display for selected planning information, the first visual display comprising a profit margin report that indicates, for one or more products associated with a specified resource, a profit margin for each time interval the resource is in use.

14. (Amended) A system [operating] operable on at least one computer for displaying planning information associated with a supply chain, comprising:

[an enterprise model representing a supply chain that involves a plurality of products and resources;]

a planning engine operable to access an enterprise model representing a supply chain that involves a plurality of products and resources and to use the enterprise model to generate planning information for the supply chain according to one or more specified constraints and one or more optimization criteria; and

a presentation interface operable to generate a first visual display for selected planning information, the first visual display comprising a report that indicates, for one or more products in the supply chain, a forecasted demand and a number of units allocated for production;

the report including a bar graph comprising:

a first axis scaled in terms of numbers of units;

a bar, associated with a product in the supply chain, extending from a second axis to a height corresponding to a first position on the first axis, the first position indicating a number of units of the product that could be sold according to customer demand; and

a marker on the bar corresponding to a second position on the first axis, the second position indicating a number of units of the product allocated for production.

15. Cancelled.

22. (Amended) A system [operating] operating on at least one computer for displaying planning information associated with a supply chain, comprising:

[an enterprise model representing a supply chain that involves a plurality of products and resources;]

a planning engine operable to access an enterprise model representing a supply chain that involves a plurality of products and resources and to use the enterprise model to generate planning information for the supply chain according to one or more specified constraints and one or more optimization criteria; and

a presentation interface operable to generate a first visual display for selected planning information, the first visual display comprising a plant distribution report that includes a bottom panel comprising:

- a first axis specifying a plurality of locations;

- a second axis specifying profit margins per hour; and

- a plurality of icons representing resources in the supply chain, each icon positioned relative to the first axis to indicate a location associated with a corresponding resource and relative to the second axis to indicate a profit margin per hour associated with the corresponding resource.

1           25. (New) A method operable on at least one computer for displaying planning information associated with a supply chain, comprising:

          at a planning engine, accessing an enterprise model representing a supply chain that involves a plurality of products and resources;

          at the planning engine, using the enterprise model to generate planning information for the supply chain according to one or more specified constraints and one or more optimization criteria; and

          at a presentation interface, generating a first visual display for selected planning information, the first visual display comprising a cashflow report providing a net present value for one or more products in the supply chain, each net present value reflecting revenues and expenses associated with a corresponding product according to time periods in which the revenues and expenses occur.

2           26. (New) The method of Claim 25, wherein the cashflow report includes a two-dimensional display comprising:

          a first panel presenting a list of the products;

          a second panel presenting the net present value for each listed product; and

          a third panel presenting a plurality of columns, each column corresponding to a specified time period and providing a net cashflow associated with each listed product during that time period.

3           27. (New) The method of Claim 25, wherein the cashflow report includes a three-dimensional display comprising:

          a bottom panel including a first axis specifying a plurality of products, a second axis specifying a plurality of time periods, and a plurality of bars each associated with a particular time period and a particular product, each bar having a height relating to a number of units of the associated product produced during the associated time period;

          a left panel including a bar graph indicating a net cash flow for each of the products specified by the first axis in the bottom panel; and

          a right panel including a bar graph indicating a net cash flow for each of the time periods specified by the second axis in the bottom panel.

28. (New) The method of Claim 25, further comprising, at the presentation interface, generating a second visual display comprising a product report, the product report comprising:

a first bar graph indicating, for one or more products in the supply chain, a percentage of forecasted demand satisfied by allocated production;

a second bar graph indicating a profit margin per unit for each of the products; and

a third bar graph indicating, for each of the products, a number of units produced for each time interval a specified resource is in use.

29. (New) The method of Claim 25, further comprising, at the presentation interface, generating a second visual display comprising a product mix report that includes a pie chart indicating one or more products' share of an allocated mix of production.

30. (New) The method of Claim 25, further comprising, at the presentation interface, generating a second visual display comprising a utilization report that indicates, for a plurality of resources, a percentage of time during which each resource is in use.

31. (New) The method of Claim 25, further comprising, at the presentation interface, generating a second visual display comprising a utilization report that indicates, for a plurality of purchased raw materials, a percentage of each raw material that is utilized.

8 ✓ 32. (New) A method operable on at least one computer for displaying planning information associated with a supply chain, comprising:

at a planning engine, accessing an enterprise model representing a supply chain that involves a plurality of products and resources;

at the planning engine, using the enterprise model to generate planning information for the supply chain according to one or more specified constraints and one or more optimization criteria; and

at a presentation interface, generating a first visual display for selected planning information, the first visual display comprising a profit margin report that indicates, for one or more products associated with a specified resource, a profit margin for each time interval the resource is in use.

9 ✓ 33. (New) The method of Claim 32, wherein the profit margin report includes a graph comprising:

a first axis scaled in terms of profit margins per unit;

a second axis scaled in terms of numbers of units produced for each time interval the specified resource is in use; and

a plurality of nodes representing the products associated with the specified resource, each node located at a position in the graph corresponding to the values for the product on the first and second axes.

10 ✓ 34. (New) The method of Claim 32, further comprising, at the presentation interface, generating a second visual display comprising a product report, the product report comprising:

a first bar graph indicating, for one or more products in the supply chain, a percentage of forecasted demand satisfied by allocated production;

a second bar graph indicating a profit margin per unit for each of the products; and

a third bar graph indicating, for each of the products, a number of units produced for each time interval a specified resource is in use.

11 ✓ 35. (New) The method of Claim 32, further comprising, at the presentation interface, generating a second visual display comprising a product mix report that includes a pie chart indicating one or more products' share of an allocated mix of production.

- 12 ✓ 36. (New) The method of Claim 32, further comprising, at the presentation interface, generating a second visual display comprising a utilization report that indicates, for a plurality of resources, a percentage of time during which each resource is in use.
- 13 ✓ 37. (New) The method of Claim 32, further comprising, at the presentation interface, generating a second visual display comprising a utilization report that indicates, for a plurality of purchased raw materials, a percentage of each raw material that is utilized.

14 1/3 / 38. (New) A method operable on at least one computer for displaying planning information associated with a supply chain, comprising:

at a planning engine, accessing an enterprise model representing a supply chain that involves a plurality of products and resources;

at the planning engine, using the enterprise model to generate planning information for the supply chain according to one or more specified constraints and one or more optimization criteria; and

at a presentation interface, generating a first visual display for selected planning information, the first visual display comprising a report that indicates, for one or more products in the supply chain, a forecasted demand and a number of units allocated for production;

the report including a bar graph comprising:

a first axis scaled in terms of numbers of units;

a bar, associated with a product in the supply chain, extending from a second axis to a height corresponding to a first position on the first axis, the first position indicating a number of units of the product that could be sold according to customer demand; and

a marker on the bar corresponding to a second position on the first axis, the second position indicating a number of units of the product allocated for production.

16 / 39. (New) The method of Claim 38, wherein the report indicates, for one or more products associated with a specified resource, a forecasted demand and a number of units allocated for production.

17 / 40. (New) The method of Claim 38, wherein the report includes a bar graph comprising:

a first axis scaled in terms of profit margins for each time interval the specified resource is used;

a second axis scaled in terms of number of units;

a bar, associated with a product associated with the specified resource, extending from a first position on the first axis to a height corresponding to a second position on the second axis, the first position indicating a profit margin for each time interval the specified resource is in use with respect to the product associated with the bar, the second position indicating a



number of units of the product associated with the bar that could be sold according to customer demand; and

a marker on the bar corresponding to a third position on the second axis, the third position indicating a number of units of the product associated with the bar allocated for production.

18 / 41. (New) The method of Claim 38, further comprising, at the presentation interface, generating a second visual display comprising a product report, the product report comprising:

a first bar graph indicating, for one or more products in the supply chain, a percentage of forecasted demand satisfied by allocated production;

a second bar graph indicating a profit margin per unit for each of the products; and

a third bar graph indicating, for each of the products, a number of units produced for each time interval a specified resource is in use.

19 / 42. (New) The method of Claim 38, further comprising, at the presentation interface, generating a second visual display comprising a product mix report that includes a pie chart indicating one or more products' share of an allocated mix of production.

20 / 43. (New) The method of Claim 38, further comprising, at the presentation interface, generating a second visual display comprising a utilization report that indicates, for a plurality of resources, a percentage of time during which each resource is in use.

21 44. (New) The method of Claim 38, further comprising, at the presentation interface, generating a second visual display comprising a utilization report that indicates, for a plurality of purchased raw materials, a percentage of each raw material that is utilized.

22 / 45. (New) A method operating on at least one computer for displaying planning information associated with a supply chain, comprising:

at a planning engine, accessing an enterprise model representing a supply chain that involves a plurality of products and resources;

at the planning engine, using the enterprise model to generate planning information for the supply chain according to one or more specified constraints and one or more optimization criteria; and

at a presentation interface, generating a first visual display for selected planning information, the first visual display comprising a plant distribution report that includes a bottom panel comprising:

a first axis specifying a plurality of locations;

a second axis specifying profit margins per hour; and

a plurality of icons representing resources in the supply chain, each icon positioned relative to the first axis to indicate a location associated with a corresponding resource and relative to the second axis to indicate a profit margin per hour associated with the corresponding resource.

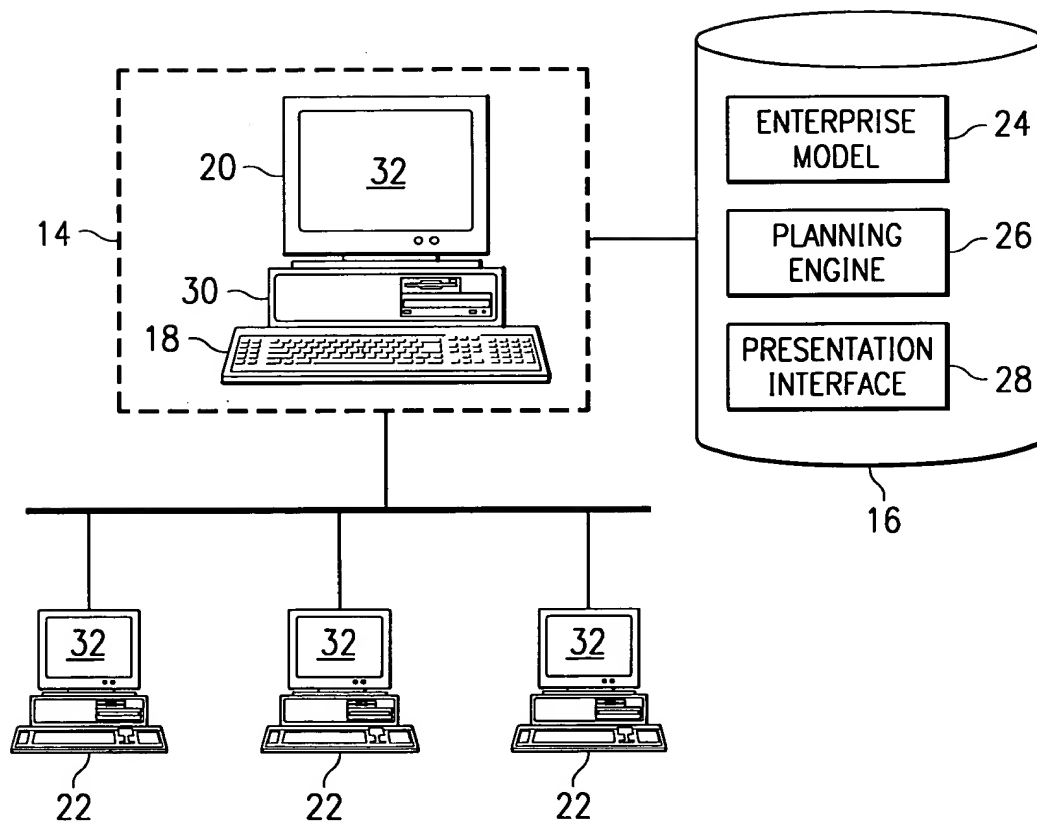
23 / 46. (New) The method of Claim 45, wherein the plant distribution report further comprises a side panel displaying bars corresponding to the locations specified by the first axis in the bottom panel, each bar providing information relating to a selected parameter.

24 / 47. (New) The method of Claim 45, wherein the plant distribution report further comprises a side panel displaying planning information relating to a selected location from the first axis in the bottom panel.

**Appendix C**

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FIG. 1



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